

What is claimed is:

1. A substrate processing apparatus comprising:
a substrate holder for holding a substrate
5 substantially horizontally and rotating the substrate; and
a processing liquid supply unit for supplying a
processing liquid onto a peripheral portion of the substrate
which is being rotated in such a manner that the processing
liquid is stationary with respect to the substrate.

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2. A substrate processing apparatus according to
claim 1, comprising a processing liquid removal unit for
removing the processing liquid from the substrate.

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3. A substrate processing apparatus according to
claim 2, said processing liquid removal unit sucks the
processing liquid on the substrate.

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4. A substrate processing apparatus according to
claim 3, said processing liquid removal unit comprises a
gas-liquid separator for separating the sucked processing
liquid and a gas from each other.

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5. A substrate processing apparatus according to
claim 4, comprising a recovery unit for recovering the
processing liquid which has been separated by said gas-
liquid separator so as to supply the recovered processing
liquid to said processing liquid supply unit.

6. A substrate processing apparatus according to claim 2, comprising a plurality of said processing liquid supply units.

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7. A substrate processing apparatus according to claim 6, comprising a plurality of said processing liquid removal units.

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8. A substrate processing apparatus according to claim 1, comprising a purge mechanism for supplying an inert gas to a surface of the substrate.

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9. A substrate processing method comprising:

holding a substrate substantially horizontally and rotating the substrate;

supplying a processing liquid onto a peripheral portion of the substrate which is being rotated in such a manner that the processing liquid is stationary with respect to the substrate; and

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sucking the processing liquid on the substrate.

10. A substrate processing apparatus comprising:

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a substrate holder for holding a substrate substantially horizontally and rotating the substrate; and

a cleaning liquid supply unit having a cleaning liquid outlet which is oriented from a center of the substrate toward a peripheral portion of the substrate with

an elevation angle of not more than 45° from a surface of the substrate;

wherein said cleaning liquid supply unit supplies a cleaning liquid to the surface of the substrate at a flow
5 velocity of not less than 0.1 m/s.

11. A substrate processing apparatus according to claim 10, comprising a receiving unit disposed in the same plane as the surface of the substrate and opens toward an
10 area of the substrate where the cleaning liquid is supplied to, the cleaning liquid being received by said receiving unit and recovered through said receiving unit.

12. A substrate processing apparatus according to
15 claim 10, wherein said cleaning liquid supply unit is disposed closely to the surface of the substrate.

13. A substrate processing apparatus according to claim 12, comprising a receiving unit disposed in the same
20 plane as the surface of the substrate and opens toward an area of the substrate where the cleaning liquid is supplied to, the cleaning liquid being received by said receiving unit and recovered through said receiving unit.

25 14. A substrate processing method comprising:
providing a cleaning liquid outlet which is oriented from a center of a substrate toward a peripheral

portion of the substrate with an elevation angle of not more than 45° from a surface of the substrate; and

supplying a cleaning liquid at a flow velocity of not less than 0.1 m/s so as to clean at least one of a front
5 surface and a back surface of the substrate which is being rotated.

15. A substrate processing method comprising:

supplying a processing liquid to a peripheral
10 portion of a substrate which is being rotated; and

supplying a cleaning liquid to an area including the peripheral portion of the substrate which has been processed by the processing liquid so as to remove the processing liquid remaining on the peripheral portion of the
15 substrate, said cleaning liquid being supplied from a cleaning liquid outlet which is oriented from a center of the substrate toward the peripheral portion of the substrate with an elevation angle of not more than 45° from a surface of the substrate.

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16. A substrate processing method according to claim 15, wherein said cleaning liquid is supplied from said cleaning liquid outlet toward the peripheral portion of the substrate in a direction substantially parallel to the
25 surface of the substrate.

17. A substrate processing method according to claim 16, comprising:

receiving the cleaning liquid by a receiving unit which is disposed in the same plane as the surface of the substrate and opens toward the area of the substrate where the cleaning liquid is supplied to; and

5 recovering the cleaning liquid through said receiving unit.